

SECTION 3

SYSTEM DEMANDS

3.1 WATER DEMANDS

Requirement

#25. Quantify, to the extent records are available, past and current water use, and projected water use over the same five-year increments described in subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural (10631(e)(1) and (2)).

3.1.1 Historical Water Demands

Water consumption in the Montebello Land and Water Company (ML&WC) service area averaged 3,296 AFY between 2005 and 2010. Water production averaged 3,576 AFY during the same period. The discrepancy is partly due to the differences in the accuracies of the few large meters which measure production, and the thousands of smaller customer meters which measure sales. Water that is unaccounted for is mostly due to unmeasured uses such as water main flushing and other maintenance related tasks. The remainder may be due to leaks from the system. The average water loss since 2005 is about 7.8%, most of which is attributable to system flushing. Table 3-1 compares water consumption and production for the period between 2005 and 2010.

Table 3-1 Water Consumption versus Water Production				
Year	Water Consumption (AFY)	Water Production (AFY)	Unaccounted for Water (AFY)	% Unaccounted for Water
2005	3,338	3,666	328	8.9%
2006	3,255	3,544	289	8.1%
2007	3,366	3,686	320	8.7%
2008	3,414	3,648	233	6.4%
2009	3,305	3,538	233	6.6%
2010	3,098	3,373	275	8.1%
Average	3,296	3,576	280	7.8%

Table 3-2 (DWR Table 3) illustrates the water deliveries in 2005 by land use category. The total delivery estimated in the 2005 Urban Water Management Plan (UWMP) was 3,900 AFY, which is 14.4% higher than the actual delivery (3,338 AFY).

Table 3-2 (DWR Table 3)
Water deliveries – actual, 2005

	2005				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	2,833	938	0	0	938
Multi-family	574	1,434	0	0	1,434
Commercial	264	558	0	0	558
Industrial	38	212	0	0	212
Institutional/governmental	119	195	0	0	195
Landscape	0	0	0	0	0
Agriculture	0	0	0	0	0
Other	0	0	0	0	0
Total	3,829	3,338	0	0	3,338
Units (circle one): <u>acre-feet per year</u> million gallons per year cubic feet per year					

Table 3-3 (DWR Table 4) shows the water deliveries for 2010, which totaled 3,098 AFY. The actual delivery is 802 AFY lower than the delivery estimated by the 2005 UWMP (3,900 AFY). This is consistent with the steady decline in consumption during the last few years and can be attributed to water conservation efforts and possibly the economic downturn. ML&WC's service area also lacks developable land, with no foreseeable future development and densification, so a significant increase in demand is unlikely to occur.

Table 3-3 (DWR Table 4)
Water deliveries – actual, 2010

	2010				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	2,275	855	0	0	855
Multi-family	1,041	1,268	0	0	1,268
Commercial	513	522	0	0	522
Industrial	31	222	0	0	222
Institutional/governmental	119	231	0	0	231
Landscape	0	0	0	0	0
Agriculture	0	0	0	0	0
Other	0	0	0	0	0
Total	3,979	3,098	0	0	3,098
Units (circle one): <u>acre-feet per year</u> million gallons per year cubic feet per year					

3.1.2 Projected Potable Water Demands

The projected potable water demands were determined based upon the existing demands, the average daily per capita water use for the 2006 to 2010 deliveries and projected population. The water demand projections are estimated using the 2020 target daily per capita water use of 92 gpcd. The daily per capita water use in 2010, however, is only 86 gpcd. The allocation of demand in each of the land use categories is based on the

estimated percentage of use, which is 70% residential, 6% industrial, 17% commercial, and 7% governmental.

The service area is built out, and it is assumed that there will not be any significant changes in land use and increase in population.

Tables 3-4 (DWR Table 5) through 3-6 (DWR Table 7) show the projected water deliveries for 2015; 2020; and 2025, 2030, and 2035.

Table 3-4 (DWR Table 5) Water deliveries — projected, 2015					
	2015				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	2,296	961	0	0	961
Multi-family	1,051	1,370	0	0	1,370
Commercial	518	580	0	0	580
Industrial	31	216	0	0	216
Institutional/governmental	120	224	0	0	224
Landscape	0	0	0	0	0
Agriculture	0	0	0	0	0
Other	0	0	0	0	0
Total	4,016	3,351	0	0	3,351
Units (circle one): <u>acre-feet per year</u> million gallons per year cubic feet per year					

Table 3-5 (DWR Table 6) Water deliveries — projected, 2020					
	2020				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	2,318	970	0	0	970
Multi-family	1,060	1,383	0	0	1,383
Commercial	523	585	0	0	585
Industrial	31	218	0	0	218
Institutional/governmental	121	226	0	0	226
Landscape	0	0	0	0	0
Agriculture	0	0	0	0	0
Other	0	0	0	0	0
Total	4,053	3,382	0	0	3,382
Units (circle one): <u>acre-feet per year</u> million gallons per year cubic feet per year					

Table 3-6 (DWR Table 7)
Water deliveries — projected 2025, 2030, and 2035

	2025		2030		2035 - optional	
	metered		metered		metered	
Water use sectors	# of accounts	Volume	# of accounts	Volume	# of accounts	Volume
Single family	2,339	979	2,360	985	2,381	997
Multi-family	1,070	1,395	1,080	1,404	1,090	1,421
Commercial	528	590	532	594	537	601
Industrial	32	220	32	221	32	224
Institutional/governmental	122	229	124	230	125	232
Landscape	0	0	0	0	0	0
Agriculture	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	4,091	3,413	4,128	3,434	4,165	3,475
Units (circle one): <u>acre-feet per year</u> million gallons per year cubic feet per year						

3.1.3 Water Sales to Other Agencies

ML&WC currently does not sell water to other agencies, and there are no plans to sell water to other agencies in the future.

Table 3-7 (DWR Table 9)
Sales to other water agencies

Water distributed	2005	2010	2015	2020	2025	2030	2035 - opt
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	0	0	0	0	0	0	0
Units (circle one): <u>acre-feet per year</u> million gallons per year cubic feet per year							

3.1.4 Additional Water Uses and Losses

Additional water uses and losses consist of saline water barrier demand, groundwater recharge, conjunctive use, raw water, recycled water, and system losses (unaccounted for water).

Groundwater recharge in the Central Basin is a regional effort. It is accomplished by the Water Replenishment District of Southern California (WRD) with the use of untreated imported water and recycled water. The amount of replenishment in the basin varies every year depending on the availability of imported water for recharge purposes, maintenance and construction at the basin, and climate. During wet years, replenishment becomes less necessary since heavy rains are sufficient to naturally recharge the basin. During dry years, however, artificial replenishment is increased. Historically, WRD purchases an average of 22,182 AFY of imported water for groundwater recharge, which is stored at the spreading grounds at Rio Hondo and San Gabriel River in the Montebello Forebay (Reference: CBMWD UWMP 2010).

In the past, WRD was also responsible for deliveries of imported water from CBMWD to the Alamitos Barrier, which prevents seawater intrusion into the basin. The average saline barrier demand in the recent years was about 5,348 AFY. Beginning 2003, however, CBMWD no longer supplies water to the Alamitos Barrier since the City of Long Beach took charge of the supply connection. In the future, WRD will reduce the supply of imported water and replace it with high quality recycled water, which is available from the Leo J. Vander Lans

Advanced Water Treatment Center, owned by WRD, in the City of Long Beach (Reference: CBMWD UWMP 2010).

Because of these efforts, ML&WC does not have its own groundwater recharge or saline barrier programs.

ML&WC does not have any additional water uses such as conjunctive use or raw water projects.

Moreover, ML&WC currently does not have any recycled water customers. However, upon completion of the Southeast Water Reliability Project Phase 1, Henry Acuna Park, ML&WC's customer that is currently being served with potable water for irrigation, will begin receiving recycled water. The recycled water will be supplied by CBMWD. The estimated recycled water demand is 18.5 AFY, which is equivalent to savings in potable water.

Some of the system losses are due to inaccuracies of the smaller customer meters compared to the larger supply and production meters which are maintained and calibrated more frequently than the smaller customer meters; water main flushing and other maintenance purposes; and system leaks. This is also referred to as "unaccounted for water", which has varied from 6.4% to 8.9% between 2005 and 2010, with an average of 7.8%. The average is used to estimate system losses in this UWMP. Majority of the unaccounted for water are for system flushing for water quality. ML&WC plans on keeping records of water used in system flushing operations to estimate the water used for this purpose and better estimate losses due to other causes.

Table 3-8 (DWR Table 10) illustrates the additional water uses and losses between 2005 and 2035.

Table 3-8 (DWR Table 10) Additional water uses and losses							
Water use ¹	2005	2010	2015	2020	2025	2030	2035-opt
Saline barriers	0	0	0	0	0	0	0
Groundwater recharge	0	0	0	0	0	0	0
Conjunctive use	0	0	0	0	0	0	0
Raw water	0	0	0	0	0	0	0
Recycled water	0	0	18.5	18.5	18.5	18.5	18.5
System losses	328	275	261	264	266	269	271
Other (define)							
Total	328	275	280	282	285	288	290
Units (circle one): <u>acre-feet per year</u> million gallons per year cubic feet per year							
¹ Any water accounted for in Tables 3 through 7 are not included in this table.							

3.1.5 Total Water Use

The total water use from 2005 and projections up to 2035 are presented in Table 3-9 (DWR Table 11).

Table 3-9 (Table 11) Total water use							
Water Use	2005	2010	2015	2020	2025	2030	2035 - opt
Total water deliveries (from Tables 3 to 7)	3,338	3,098	3,351	3,382	3,413	3,434	3,475
Sales to other water agencies (from Table 9)	0	0	0	0	0	0	0
Additional water uses and losses (from Table 10)	328	275	261	264	266	269	271
Total	3,666	3,373	3,612	3,646	3,679	3,703	3,746
Units (circle one): <u>acre-feet per year</u> million gallons per year cubic feet per year							

3.1.6 Low-income Projected Water Demands

Requirement

#34. The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier (10631.1(a)).

According to the 2005-2009 American Community Survey of the United States Census Bureau, the median income in the City of Montebello in 2009 was \$51,449. With a total number of households at 18,443 during that time period, approximately 48.5% have incomes less than the median, and 13% of all families live below the poverty level. (Reference: U.S. Census Bureau, 2005-2009 American Community Survey). From this information, it can be inferred that about 13% of the households within ML&WC's service area falls under the low-income category. The low-income water demands are estimated by taking the same percentage (13%) of the total residential water demands. It is assumed that the proportion of low-income households will remain unchanged in the future. Table 3-10 (DWR Table 8) lists the water demands for the low-income segment of ML&WC's service area.

Table 3-10 (DWR Table 8) Low-income projected water demands					
Low Income Water Demands ¹	2015	2020	2025	2030	2035 - opt
Single-family residential	126	129	131	134	137
Multi-family residential	179	183	187	191	195
Total	305	312	318	325	332
Units (circle one): <u>acre-feet per year</u> million gallons per year cubic feet per year					
¹ Provide demands either as directly estimated values or as a percent of demand.					

3.2 BASELINES AND TARGETS

Requirement

#1. An urban retail water supplier shall include in its urban water management plan . . . due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data (10608.20(e)).

As previously mentioned, ML&WC is currently not delivering recycled water to any of its customers. Therefore, as shown in Table 3-11 (DWR Table 13), a 10-year base period, in compliance with Section 10608.20 of SBX7-7, is used to calculate ML&WC's baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use. The selected years are from

1995 to 2004. For the 5-year base period, to satisfy the requirements of Section 10608.22 of SBX7-7, the years from 2006 to 2010 are chosen.

Table 3-11 (DWR Table 13) Base period ranges			
Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries	3,414	see below
	2008 total volume of delivered recycled water	0	see below
	2008 recycled water as a percent of total deliveries	0	percent
	Number of years in base period ¹	10	years
	Year beginning base period range	1995	
	Year ending base period range ²	2004	
5-year base period	Number of years in base period	5	years
	Year beginning base period range	2006	
	Year ending base period range ³	2010	
Units (circle one): <u>acre-feet per year</u> million gallons per year cubic feet per year			
¹ If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.			
² The ending year must be between December 31, 2004 and December 31, 2010.			
³ The ending year must be between December 31, 2007 and December 31, 2010.			

The basis of the service area population estimate, used in the baseline calculations, is the Population by Census Tract Numbers Table, which is available on the Bureau of Census website. Table 2-1 (DWR Table 2) presents ML&WC's service population. Service population for the base years (1995 to 2004) are in Table 3-12 (DWR Table 14).

Also shown in Table 3-12 (DWR Table 14) is the gross water use from 1995 to 2004, which is obtained from ML&WC's water records. By averaging the individual annual daily per capita water use, which is calculated for each of the years in the 10-year base period, the 20x2020 baseline daily per capita water use is determined to be 115 gallons per day per capita (gpcd).

Utilizing Method 1, as discussed in *Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan*, in which a flat rate of 20% is deducted from the baseline, the 2020 urban water use target is determined to be 92 gpcd. Using the same method, the interim target for 2015, reduced by 10% of the baseline, is determined to be 103 gpcd. The 2020 target is equal to the most recent five-year average of 92 gpcd; therefore, it can be inferred that ML&WC has already satisfied the requirements of the 20x2020 Water Conservation Plan.

Table 3-12 (DWR Table 14)				
Base daily per capita water use — 10- to 15-year range				
Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	1995	30,045	3.32	110
Year 2	1996	30,178	3.61	120
Year 3	1997	30,311	3.84	127
Year 4	1998	30,445	3.64	120
Year 5	1999	30,578	3.64	119
Year 6	2000	30,711	3.51	114
Year 7	2001	30,862	3.47	112
Year 8	2002	31,013	3.47	112
Year 9	2003	31,163	3.31	106
Year 10	2004	31,314	3.44	110
Year 11				
Year 12				
Year 13				
Year 14				
Year 15				
Base Daily Per Capita Water Use ¹				115
¹ Add the values in the column and divid by the number of rows.				

To illustrate ML&WC's progress in attaining its goal to reduce its average per capita water use, Table 3-13 (DWR Table 15) calculates the baseline daily per capita water use for the chosen 5-year base period. It shows that between the years 2006 and 2010, the average per capita water use is cut down to 92 gpcd, which is equal to the 2020 target. This demonstrates that ML&WC has already met the 20% reduction aimed for 2020.

Table 3-13 (DWR Table 15)				
Base daily per capita water use — 5-year range				
Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	2006	31,616	2.91	92
Year 2	2007	31,766	3.01	95
Year 3	2008	31,917	3.05	96
Year 4	2009	32,068	2.95	92
Year 5	2010	32,219	2.77	86
Base Daily Per Capita Water Use ¹				92
¹ Add the values in the column and divid by the number of rows.				

3.3 WHOLESALE AGENCY WATER DEMAND PROJECTIONS

Requirement

#33. Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c) (10631(k)).

Montebello Land and Water Company does not rely on supplies from a wholesale water agency. Table 3-14 (DWR Table 12) presents the projected wholesale supplies.

Table 3-14 (DWR Table 12) Retail agency demand projections provided to wholesale suppliers							
Wholesaler	Contracted Volume ³	2010	2015	2020	2025	2030	2035 -opt
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3.4 WATER USE REDUCTION PLAN

Requirement

#2. Urban wholesale water suppliers shall include in the urban water management plans . . . an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part (10608.36).

Montebello Land and Water Company is not a wholesale water supplier.